7-17-1974

Color Photograms

Weston Kemp

Thesis of record; color photograms
Weston D. Kemp. RIT, Rochester NY 1974

NAME AND ADDRESS

DATE

Aug. 31, 1989

THESIS OF RECORD

C O L O R P H O T O G R A M S

WESTON D. KEMP

Candidate for the
MASTER OF FINE ARTS
in the College of Graphic Arts
and Photography at the
Rochester Institute of Technology

July 17th, 1974

THESIS COMMITTEE

PROFESSOR BETTY HAHN

Professor Frank Argento

Professor Lawrence Williams

DEDICATION

this work is dedicated to

HENRY HOLMES SMITH

who, while speaking of his images, said,

"Some of these pictures loom large in my life. Some of them grace it well. It would please me if some of them managed to grace the lives of others. I could hardly wish for more. In fact, I don't."

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INTRODUCTION

Laszlo Moholy-Nagy has suggested that, "the photogram is the purest form of photography." The photogram simply utilizes photo-sensitive material and light to produce images.

Until focusing myself on this thesis effort, my work in photography had dealt with, and depended upon, the subject. Photograms need have no real relationship to subject matter. Its only content is the elements of its design: the play of light in space.

This project provided an opportunity for a healthy liberation from my long concern with "subject", fostering a rebirth of serious concern for "image" and for "myself".

As Ernst Haas has indicated, "the object is totally unimportant; the subject matter is yourself - your feelings and reactions to what you see - and you express yourself through form and color."

This project extended the boundaries of my visual and visceral conceptions into heretofore unknown, and unsuspected, areas through the medium of light modulation.

Out of the serious exploration of this medium, with all the attendent frustrations, speculations, experimentation and sustaining revelation, grew the beginnings of a personal approach to image making - a commencement.

COLOR PHOTOGRAMS

Cameraless Production and Reproduction of Color Photographic Images

THESIS PROPOSAL
for the
MASTER OF FINE ARTS
Degree

College of Graphic Arts and Photography
Rochester Institute of Technology

Submitted By:
Weston D. Kemp

February 14, 1972
Revised
Dec. 11, 1972

Advisor:
Professor B. Hahn

Approved By Graduate Committee:

_____ _____

Date Chairman

PURPOSE OF THIS THESIS: TO PRODUCE AN ORIGINAL BODY OF CAMERALESS IMAGES DEALING WITH THE PLAY OF LIGHT IN SPACE

SCOPE OF THIS THESIS: This proposal grows from an enduring interest and respect for the work of Man Ray and Moholy Nagy. Nagy said, "The photogram is the purest form of photography". The photogram simply utilizes film and light to make beauty.

Until now, my work in photography has dealt with, and depended upon, the subject. Photograms need have no real relationship to subject matter. Its only content is the elements of its design; the play of light in space.

This project provides an opportunity for a healthy liberation from my long concern with "subject", allowing a rebirth of serious concern for the photographic image.

My recent deep involvement in the production of a new photography text has kindled increased respect and concern for beauty in images.

The execution of this project will require great concern and involvement with design concepts, with color as a visual element, and with light and its modulation as a visual resource.

In response to the need for generating viable images that can exist independent of familiar forms, I will develop an individual approach in producing color photograms of aesthetic merit.

I find myself excited and intrigued by the new (for me) directions this project will reveal.

PROCEDURES:

THIS PROJECT TO EXTEND THE BOUNDARIES OF MY CONCEPTIONS INTO UNKNOWN, BUT POSSIBLY PREDICTABLE, AREAS THROUGH THE MEDIUM OF LIGHT MODULATION WILL INVOLVE THE FOLLOWING:

Research will include investigation of the work of Man Ray, Kepes, Moholy-Nagy, et al

Study and review of essential technical areas such as the nature and optic of light, additive and subtractive color processes, production and reproduction of color with contemporary films and papers, color separation techniques.

Media and techniques for executing this thesis will include the following:

The final images will have been generated by one or more of these approaches: Direct Imaging - on sheet of color print material, Inter- imaging - from positive on negative color film images, Composite

Imaging - from multiple positive or negative black/white and color film or paper images.

Images will be produced on photo sensitive materials as a result of exposure to modulated light. This light will be manipulated to photographically shape form, color, texture, and line.

Light modulators will include natural and man-made objects and materials, optical devices, sound, and motion.

I would expect to present a minimum of twenty finished pieces varying in size from 6 by 8 inches to as large as perhaps 3 by 10 feet.

This thesis will consist of:

A. Annotated research including an illustrated history of photographic images produced without cameras.
B. Documented experiments in multicolor and cameraless imagery.
C. Production of cameraless images employing photographic materials.
D. Presentation of the finished images.
E. Appropriately illustrated report and documentation of this thesis.

My proposed advisor, Professor Betty Hahn, has excellent credentials and experience. Much of her personal photographic imagery is generated by techniques and a visual approach not greatly unrelated to this thesis proposal.

PHOTOGRAMS:

A brief survey

The exploration of photograms as a medium of photographic image making goes back to more than a century before the introduction of the daguerreotype.

In the 1720's the German scientist Johann Schulze, while experimenting with silver salts, produced images by modulating light with stencils in which words were cut.

In the 1830's, William Henry Fox Talbot placed a piece of lace on his sensitized paper and produced his first photographic image - a photogram.

A less well known innovator, Alvin Langdon Coburn, an American working in England, was inspired by the abstract works of 20th Century painters. He proposed that photographic

image makers "think of the joy of doing something which it would be impossible to classify, or to tell which was the top and which was the bottom!". Coburn made the then-scandalous proposal that an exhibition devoted exclusively to abstract photography be organized, and that "in the entry form it be distinctly stated that no work will be admitted in which the interest of the subject matter is greater than the appreciation of the extraordinary."

Christian Schad, a Swiss Dadaist, in 1918 produced what he called "schadographs" - photograms by another name.

Two men are generally credited with the basic investigations of photograms as serious images, in the 1920's; Man Ray, an American

working in Paris, and Laszlo Moholy-Nagy, a Hungarian working at the Bauhaus in Germany. Working independently on their experiments, they sought to fulfill what they believed to be photography's mission - to investigate the "pure" actions of light in space.

Man Ray was an irrepressible experimenter. One day he placed a piece of unexposed photographic paper in a tray of developer. On the paper he placed a glass funnel, a graduate, and a thermometer. He then turned on the light. "Before my eyes, an image began to form, not quite a simple silhouette of the objects as in a straight photograph but distorted and refracted by the glass."

Excited by the visual possibilities of this technique, Ray experimented with strewing every sort of object on the printing paper -- bottles, scratched glass, beads, hairpins, wire, anything that would modulate light. Opaque objects produced images with sharp contours; translucent ones added a variety of textures and tones. Sometimes he used a stationary light for the exposure; at other times he used a moving flashlight. The photograms of Man Ray have served as a model and inspiration for much of the work subsequently done with this technique.

Laszlo Moholy-Nagy, produced a large collection of photograms. Moholy-Nagy felt that the photogram was the purest form of photography.

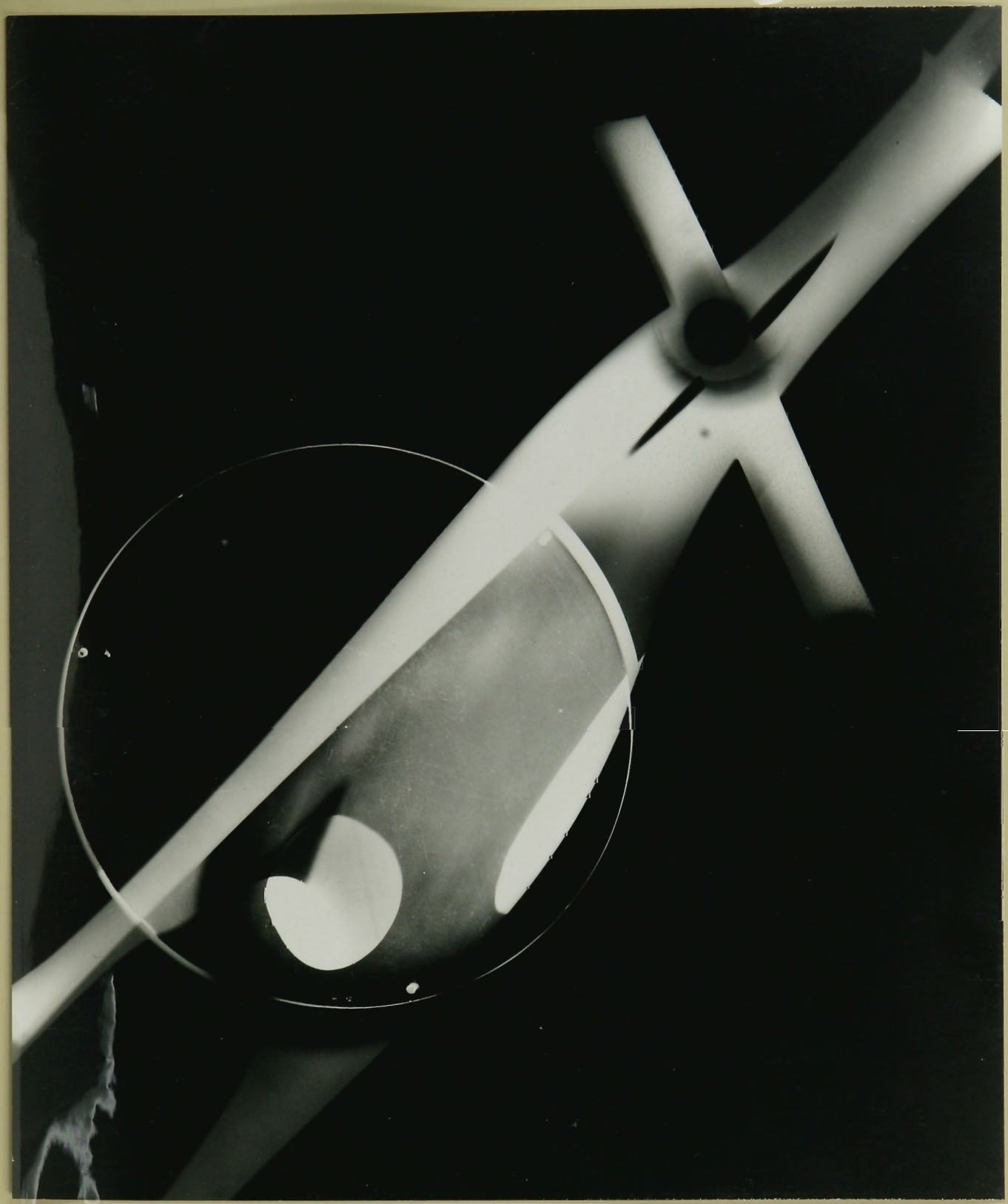
He explored all the effects of light striking a light-sensitive material. He said, "Cameraless pictures are...direct light diagrams recording the action of lights over a period of time, that is the motion of light in space."

The interest in abstract photographic image making that blossomed during and after World War I, withered rapidly. Concern for abstract photography re-awakened in the years following World War II. In the 1950's Aaron Siskind commented that, "the emphasis of meaning has shifted from what the world looks like to what we feel about the world and what we want the world to mean."

Henry Holmes Smith is the best known contemporary producer of photograms. In his notes for

Portfolio Two Henry Holmes Smith, he speaks of his "refraction prints"; "Referring to the shapes themselves.....they tell me things: the way a parent might appear to a child, the way of a parent with a child, the adventures of adolescense, marriage, and I suppose someday now, old age, too." Smith's metaphorical images of imagination's objects and people have been described by Betty Hahn as "having the quality of being almost temporary in existence: "Angel" and "Giant" are sparkling water on paper and retain the feeling that they might change if you looked away. There is that slight uneasiness about them, but there is also grace in their surface sheen and posture...to experience his color gives

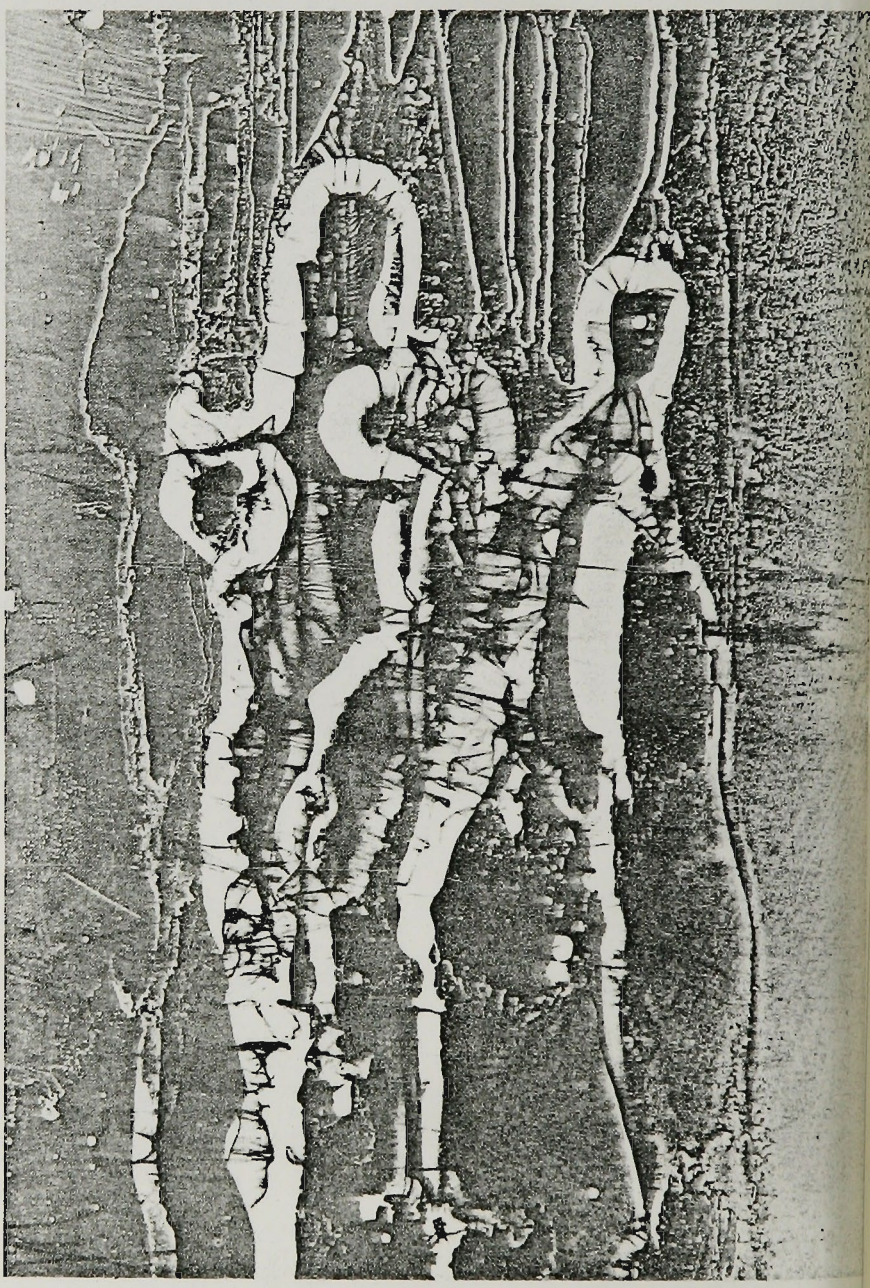
the viewer some insight into Smith's singular ability to handle color. There is the feeling of standing in the presence of colors never seen before."



Laszlo Moholy-Nagy
"Photogram" 1924. (I.M.P./G.E.H.)

William Henry Fox Talbot
"Lace" c. 1839 Photogram
(I.M.P./G.E.H.)

ENRY HOLMES SMITH, Angels, 1952. This and the following three Smith photographs are from *Henry Holmes Smith Portfolio Two*, Louisville Center for Photographic tudies, 1973. Prints are by Alex Traube.



HENRY HOLMES SMITH, Mother and Son, 1951.

Alvin Langdon Coburn
"Vortograph of Ezra Pound" 1917
Prism used to modulate image.
(I.M.P./G.E.H.)

RESEARCH AND PRODUCTION PROCEDURES

RESEARCH AND PRODUCTION PROCEDURES

The concretization of light phenomena is peculiar to the photographic process and to no other technical invention.

The photogram is a realization of spatial tension in the visible spectrum.

It is a writing with light, self-expressive through the contrasting relationship of the deepest black and lightest white with a transitional modulation of the finest tones.

Although often it is without representational content, the photogram is capable of evoking an immediate optical experience, based on our psycho-biological visual organization.

In its simplest form, a photogram is produced by positioning an object (light-modulator) between a light source and a photo sensitive material. An exposure is made to form a latent image which is then processed to yield a visible, permanent, image.

Making photograms requires the exploitation of light-sensitive material by fixing upon it visual phenomena composed by the image-maker. The visual phenomena can be referred to as the articulation of light in space.

The production of photograms for this thesis required research and experimentation in areas which included:

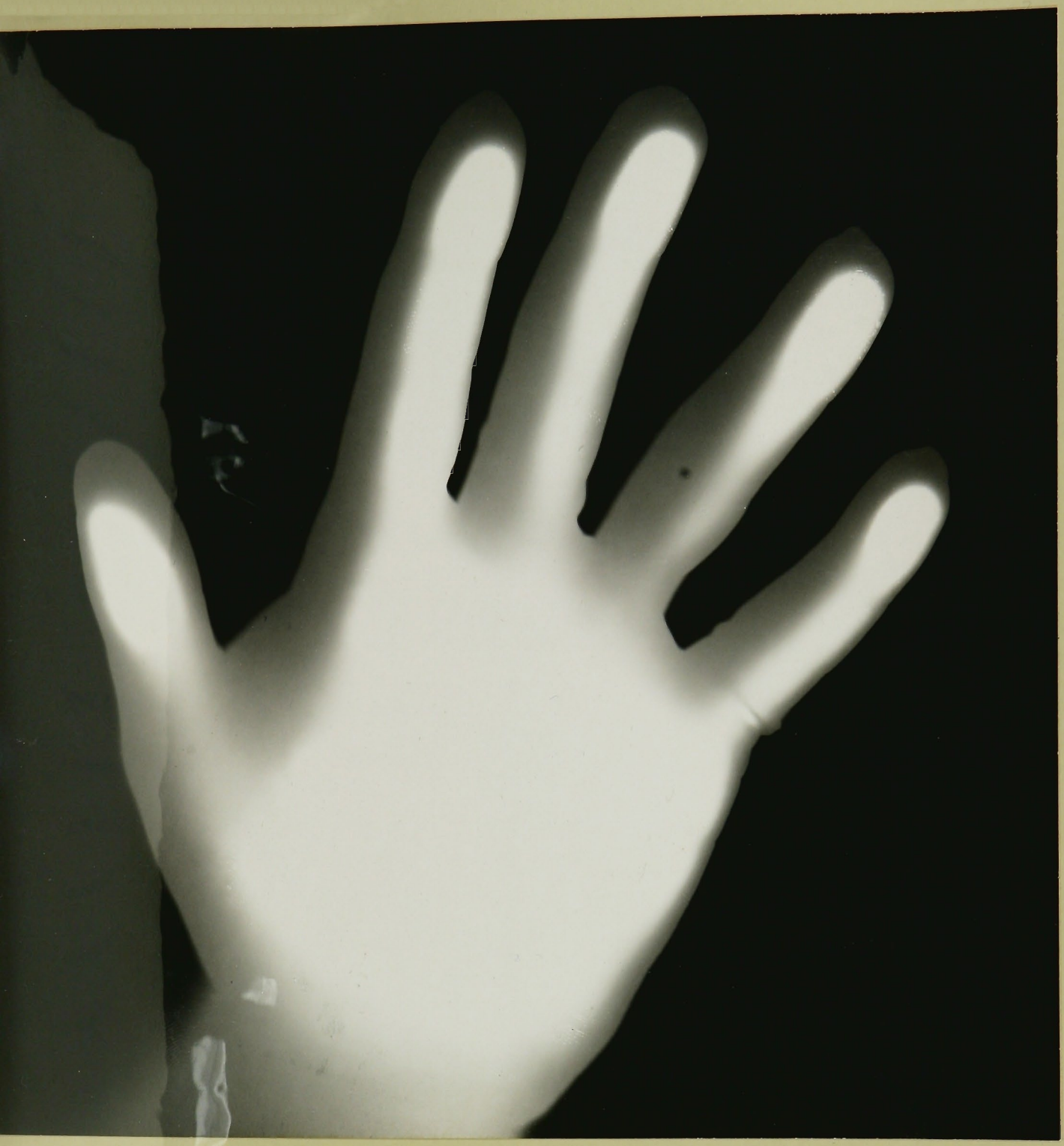
A. The qualities of light and light sources.

B. The selection and/or synthesizing of light-modulators.

C. Light sensitive materials for black/white and for color images.

D. Various photographic imaging techniques including: Direct imaging, inter-imaging, composite imaging.

Documentation of this research and experimentation is chronologically presented on the following pages. These often crude research images may be considered as sketches in which ideas were tested and as bridges which enabled me to move forward in my self/image-making evolution.



A simple photogram

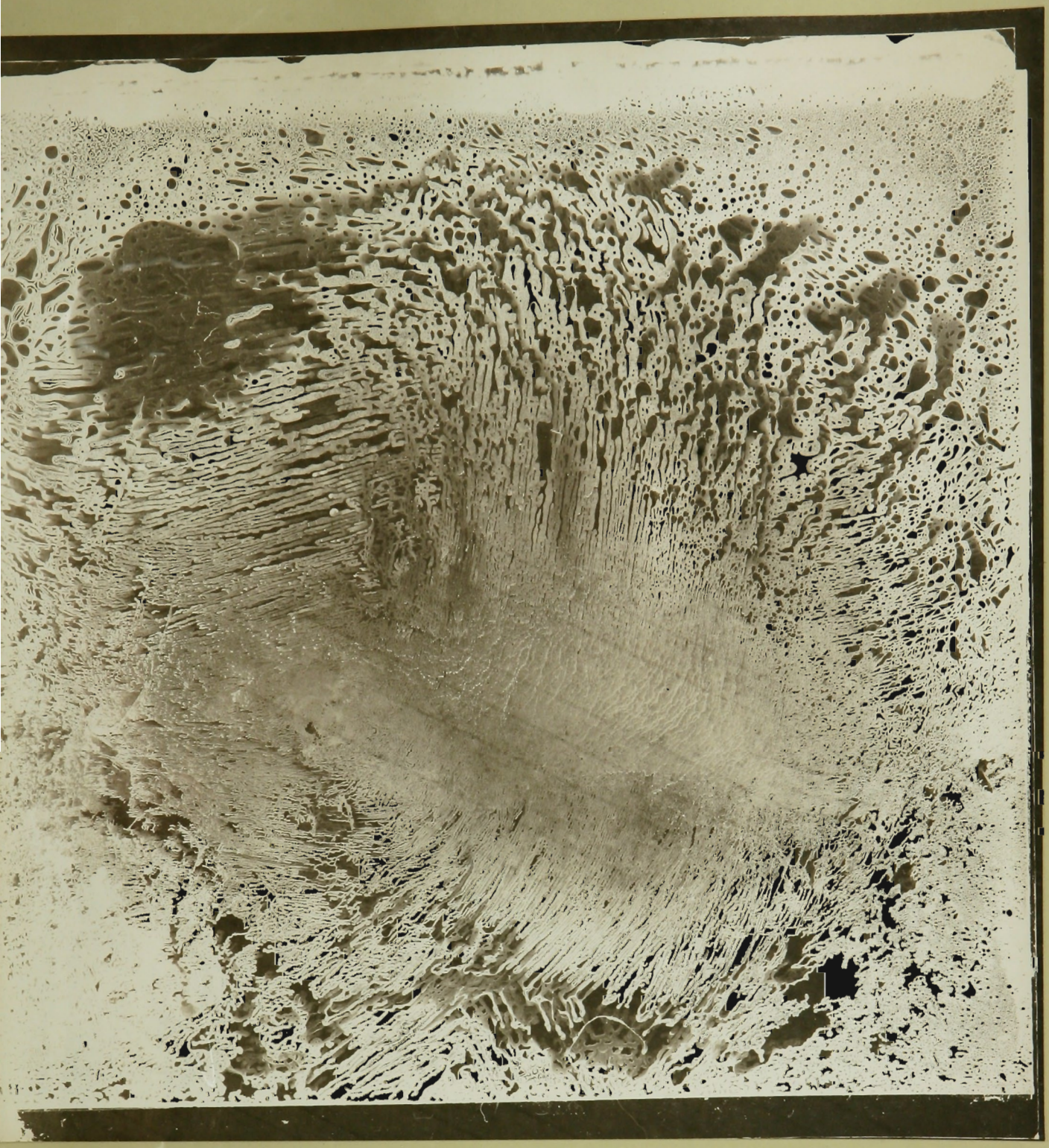
The modulator (hand) was positioned on photo paper, exposed, and processed.

10 Sec Type 55

Meter 5½

direct read

Polaroid Type 55 film (asa 75) and a Gossen Lunapro meter were used to determine optimum exposure by emperical correlation with selected film or paper



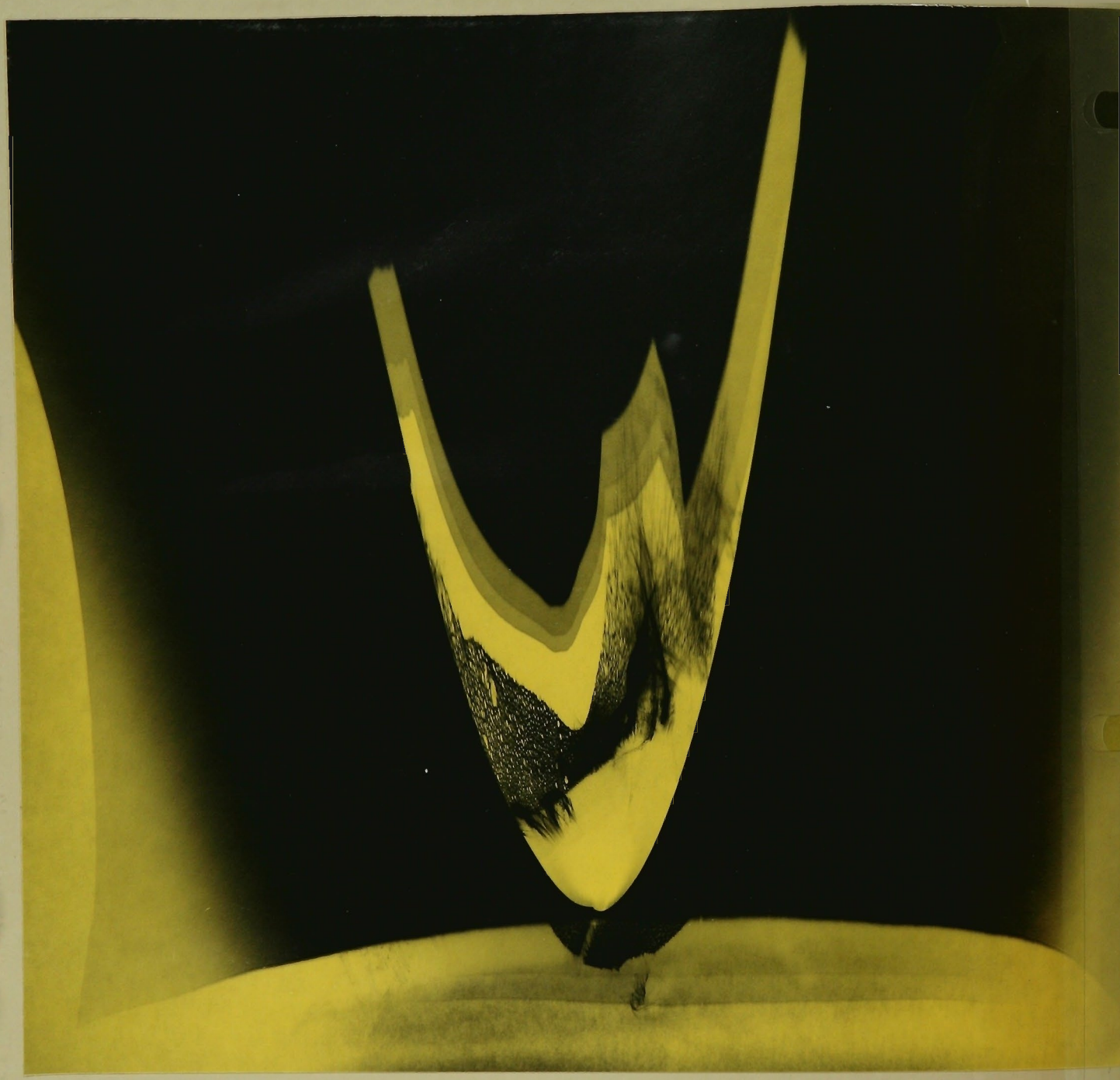
A research image produced while studying the capillary action of india ink between slide glass.

A research image produced during investigations of light modulating substances and materials.(honeyand glass)

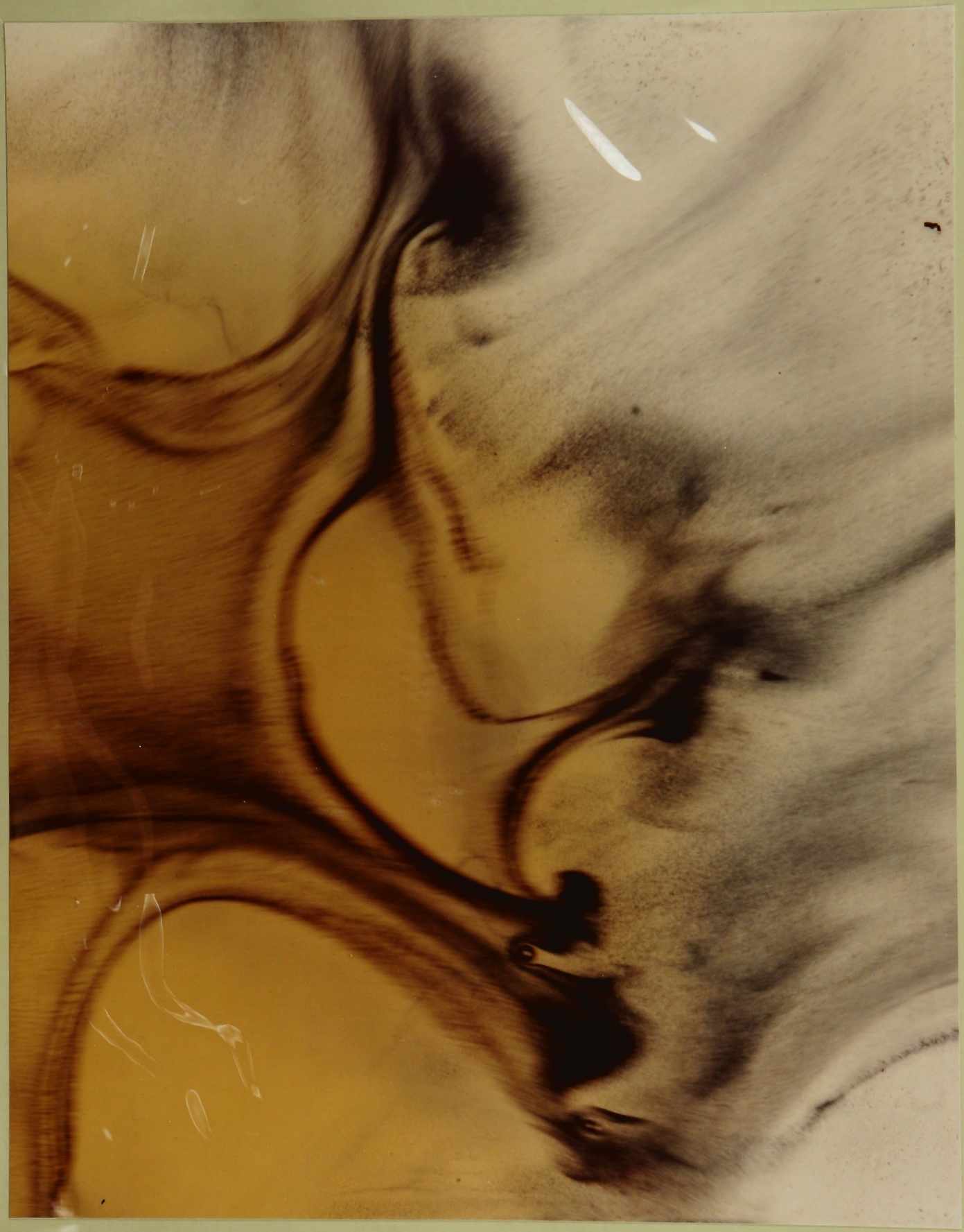
A research image from experimentations with oil-water as a potential light modulator.

A study print incorporating primary and secondary refraction phenomena. These experiments resulted in more optical control.

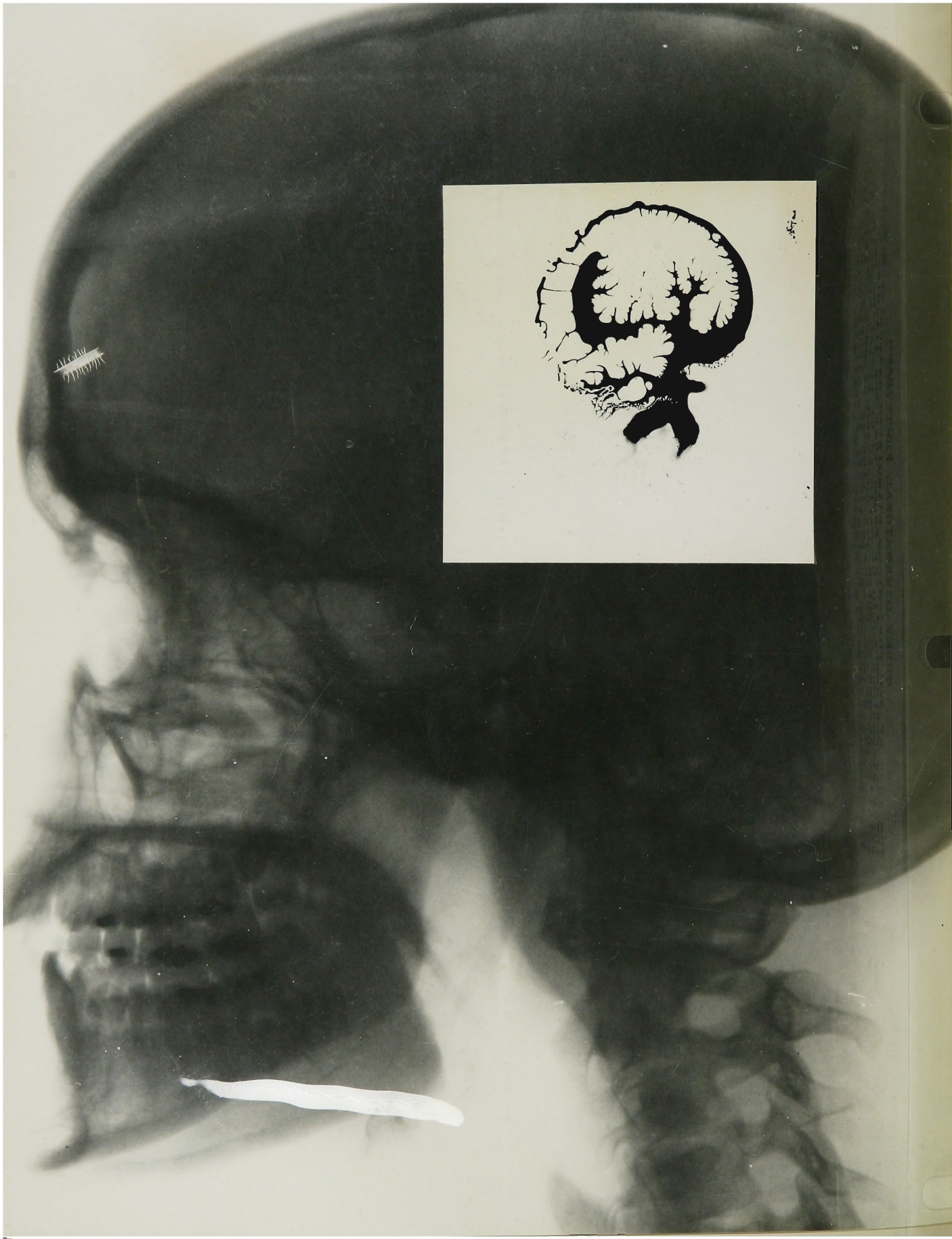
A research image from experiments in controlling the reon qualities of glass nts.



Research image from experiments with glass fragments as light modulators with Colorbrome photographic paper.



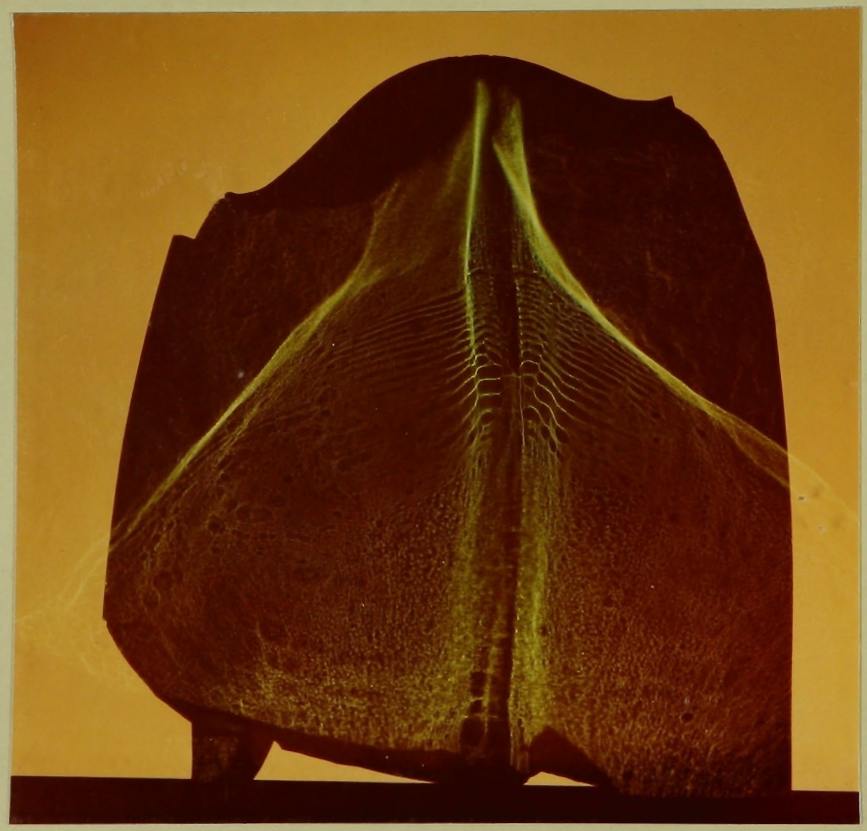
A research image from investigations of liquids as light modulators.

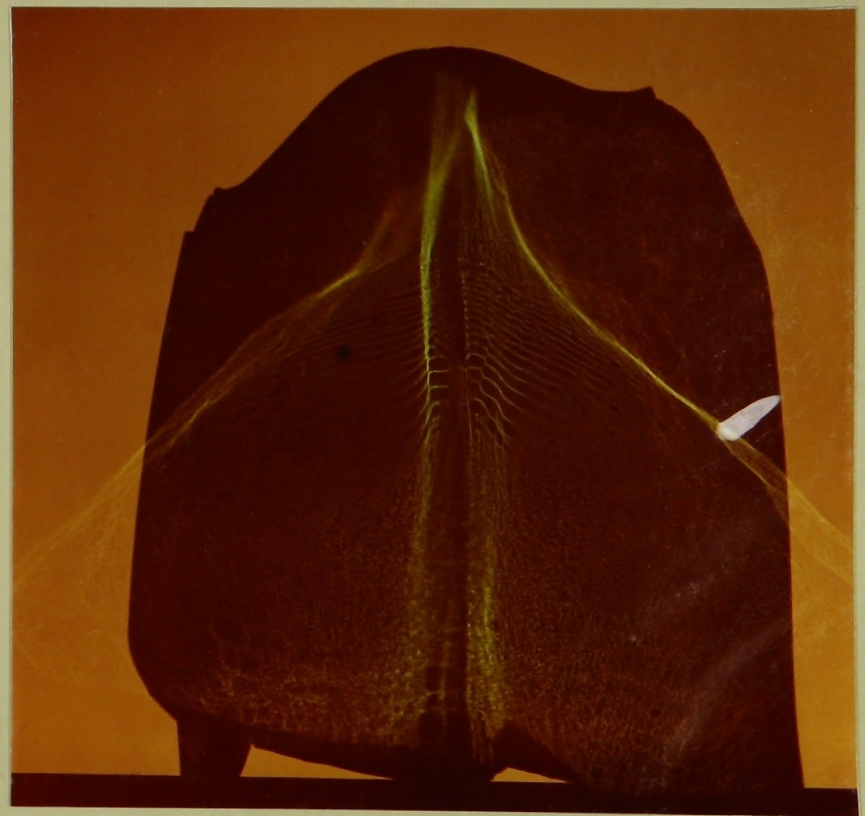


The small modulator research image stimulated consideration of radiographic images as photograms. After further research, rejected this resource.

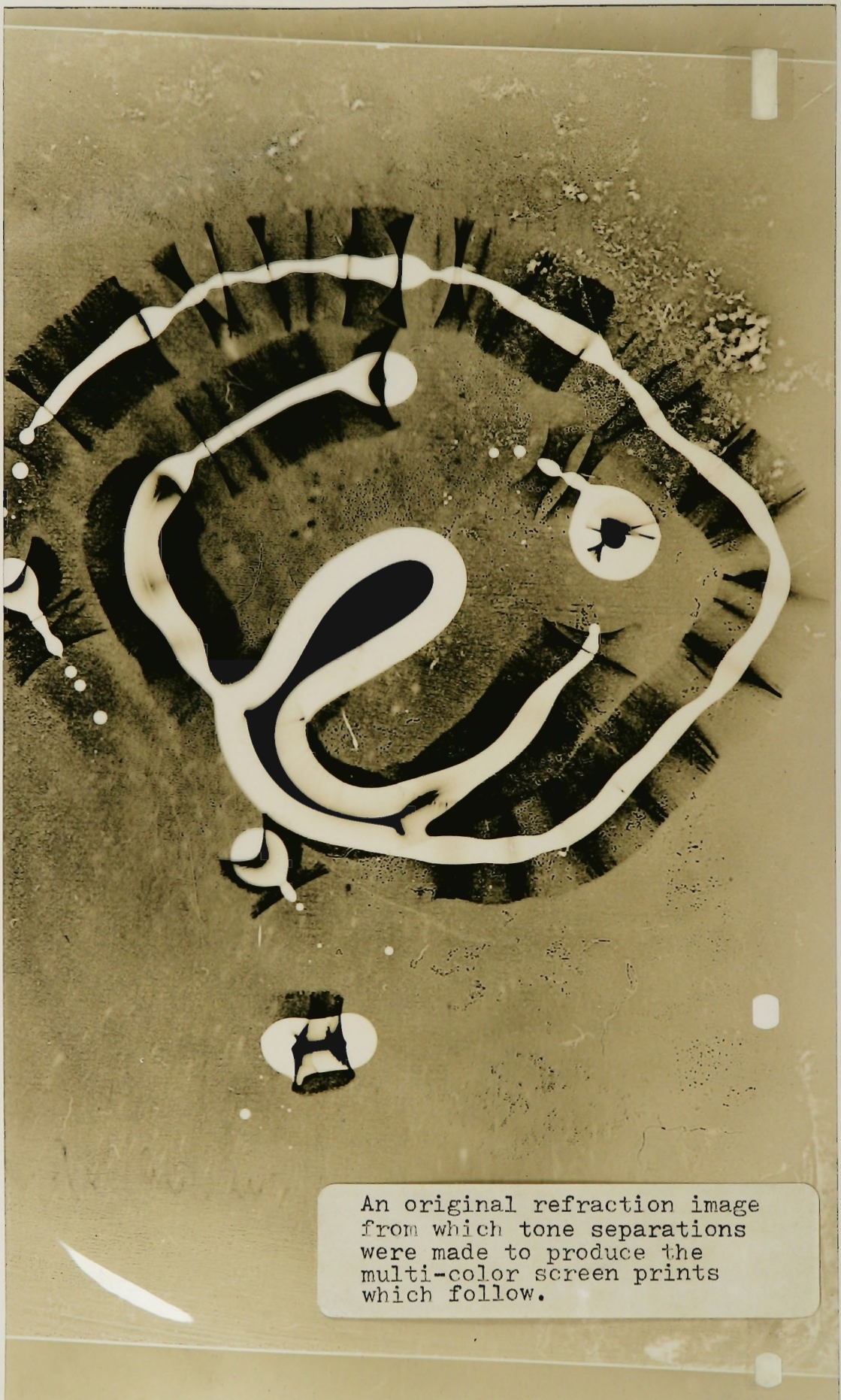
THREE-DIMENSIONAL PHOTOGRAMS

The idea of 3-D photograms stimulated extensive preliminary research. It was found that the illusion of three dimensions could be achieved by producing two similiar images in which the position of the exposing point light source is varied slightly between exposures. The resulting images may be placed in a standard stereo viewer to observe and evaluate the 3-D illusion. I felt that further research was beyond the scope of this thesis. I do anticipate making further investigations.





A preliminary study print.
An intermediate stage in the evolution of the idea is represented by the print on the facing page.

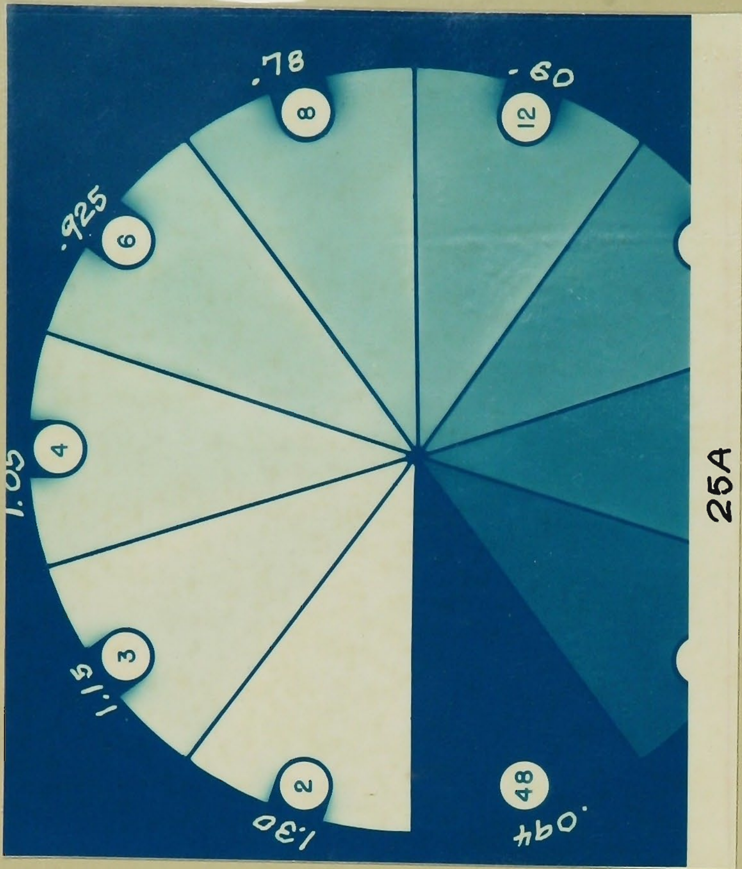


An original refraction image from which tone separations were made to produce the multi-color screen prints which follow.

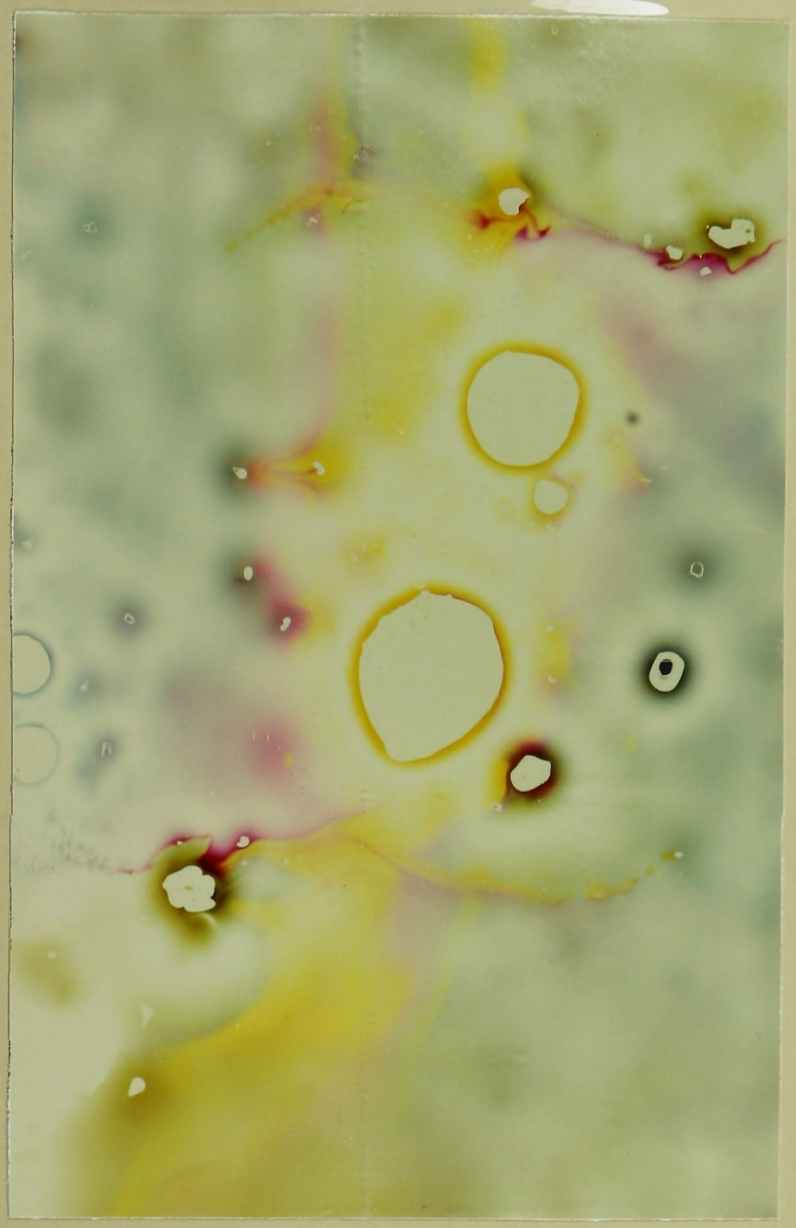
A screen print from three of four tone separations (minus the cyan image).

A four-color screen print of a refraction image formed by modulating light with liquid shampoo on glass.

A work print for synthesized conceptual image. A later stage in the evolution of the idea is shown below.



Color printing test images from an investigation of the response of Ektacolor Professional paper when exposed with various filters.



A research image from a series of experiments dealing with the refraction/filtration qualities of various organic dyes.

A Monoprint (photo-etching) from an original black and white photogram.

Equidensity images from blac and white photograms. Variou high-contrast masks were use with the Dupont Cromalin pro to yield color images.

EQUIDENSITY IMAGES:
From black and white to color

An equidensity begins as a black-and-white photograph and culminates as a color image. Colors are arbitrarily assigned to densities in the tonal scale between absolute black and white.

The creation of an equidensity is a relatively simple operation. A black-and-white image on film is printed at various exposure times on high-contrast films. As the duration of each exposure increases, so does the density of the image recorded on the film. The result is a series of masks corresponding to different density levels. From these, countermasks are made. The combination of masks and countermasks is then exposed through a color filter on color negative film. This operation is repeated several times on the same sheet, using new combinations of mask couples and filters. The multi-exposed color negative is then ready for processing-printing.

Alternatively, the masks may be used for the production of screen-printed images or photo-etchings.

This image was achieved after considerable experimentation. It is significant in that it crystallized visual ideas and personal direction.

ack holes—the enigmas of outer space

Ed. note: Terence Dickinson, former assistant director of the Strasenburgh Planetarium, is now executive editor of Astronomy Magazine. He will continue to write his column from Milwaukee.

By TERENCE DICKINSON
Gannett News Service

Future generations of man, venturing beyond the planets to ply the vast spaces between the stars will, sooner or later, encounter the most bizarre objects yet uncovered by man's inquisitive mind—the ominous gravitational black holes.

These strange objects, discussed theoretically only a few years ago, have now been observed.

No longer theory, the cosmic abyss of a black hole is reality.

Observing a curious X-ray star in the constellation Cygnus, astromers are now convinced the invisible object orbiting around it is a black hole—one of billions thought to populate the universe.

Anything that comes into the gravity embrace of a black hole becomes a helpless plummeting speck accelerated to fatal velocities and pressures.

Let's take our future space travelers heading toward, say, the star Aldebaran.

They detect an incredibly strong gravity field seemingly attached to no physical object.

Trapped in its grip the spaceship is as helpless as a human falling into a bottomless pit. Eventually the craft is crushed out of existence by the immense gravity of this cosmic trap.

Fiction? No, gravitational black holes are as real as the gravity that pulls raindrops to earth.

They are the ghostly tombstones of dead stars—stars that once shone far brighter than the sun.

Upon reaching maturity, their fuel supplies of hydrogen and helium became exhausted.

They die in colossal supernova explosions.

One supernova explosion liberates more energy in a second than the sun does in millions of years.

During such cataclysms the outer layers of the dying star are ejected while the core collapses under its own weight.

With increasing density the core's surface gravity rapidly escalates until a mass more than five times the sun's crushed itself out of existence.

Yet the gravity field remains. Like the energy contained in an unexploded bomb the gravity of the former star remains even though nothing else does.

Anything that happens to pass by is scooped up and swallowed.

Where does it go? What happens to matter pulled into a black hole?

Do black holes eject matter into other universes or back into our own universe?

What happens to time when gravity supercedes all other forces?

No one, at least on planet earth, knows.

The Times-Union, Saturday, Jan. 12, 1974 — 4C

"A major dilemma is what happens within the black hole as it nears the ultimate—a "singularity." Some believe that just as Newton's laws break down under the extreme conditions where relativity becomes dominant, so relativity itself breaks down within the even more extreme conditions of a black hole, the laws that govern there being totally unknown to us.

It may also be, as noted by Roger Penrose of Birkbeck College at the University of London, that the black-hole contraction in some cases is sufficiently lopsided so that all sides are not closed off. This would permit one to peek into the forbidden sanctum—theorists call it a "naked singularity." What would we see there? Is it possible that such wild things happen to space and time that a singularity would constitute a window into some other universe, some other realm of space and time far removed from our own?

Several theorists, including Igor Novikov in the Soviet Union and Yuval Ne'eman in Israel, have proposed that a star which goes down the drain through a black hole may emerge in some other place and time as a quasar. Are the brilliant quasars, then, really "white holes" in which material (in energy form) is pouring into the here and now from "somewhere else"—perhaps even another universe?

That other universes may exist is certainly possible, in the view of John Wheeler at Princeton, who has probably pondered such questions as deeply as anyone of our time. Each universe would have its own dimensions, its own physical "constants" and laws. These universes would have their home in a "superspace" indefinite in space and time.

Efforts to understand black holes and related phenomena are drawing theorists over the horizon into new realms of speculation that may not be entirely esoteric. The effort to explain what made stars shine anticipated the discovery of nuclear energy. If we find out that black holes are the energy source in quasars and other superenergetic objects, it could be a revelation of comparable significance.

According to Chandra, the precocious graduate student of 1930 who, at the University of Chicago, is now a dominant figure in astrophysics: "The present situation is not unlike that in the twenties when the conversion of hydrogen into helium was contemplated as a source of stellar energy, with no sure knowledge that it could be accomplished; only years later were well-defined chains of nuclear reactions that could accomplish it formulated." To achieve an understanding of even more exotic phenomena, such as black holes, he believes, "we may similarly have to wait some years."

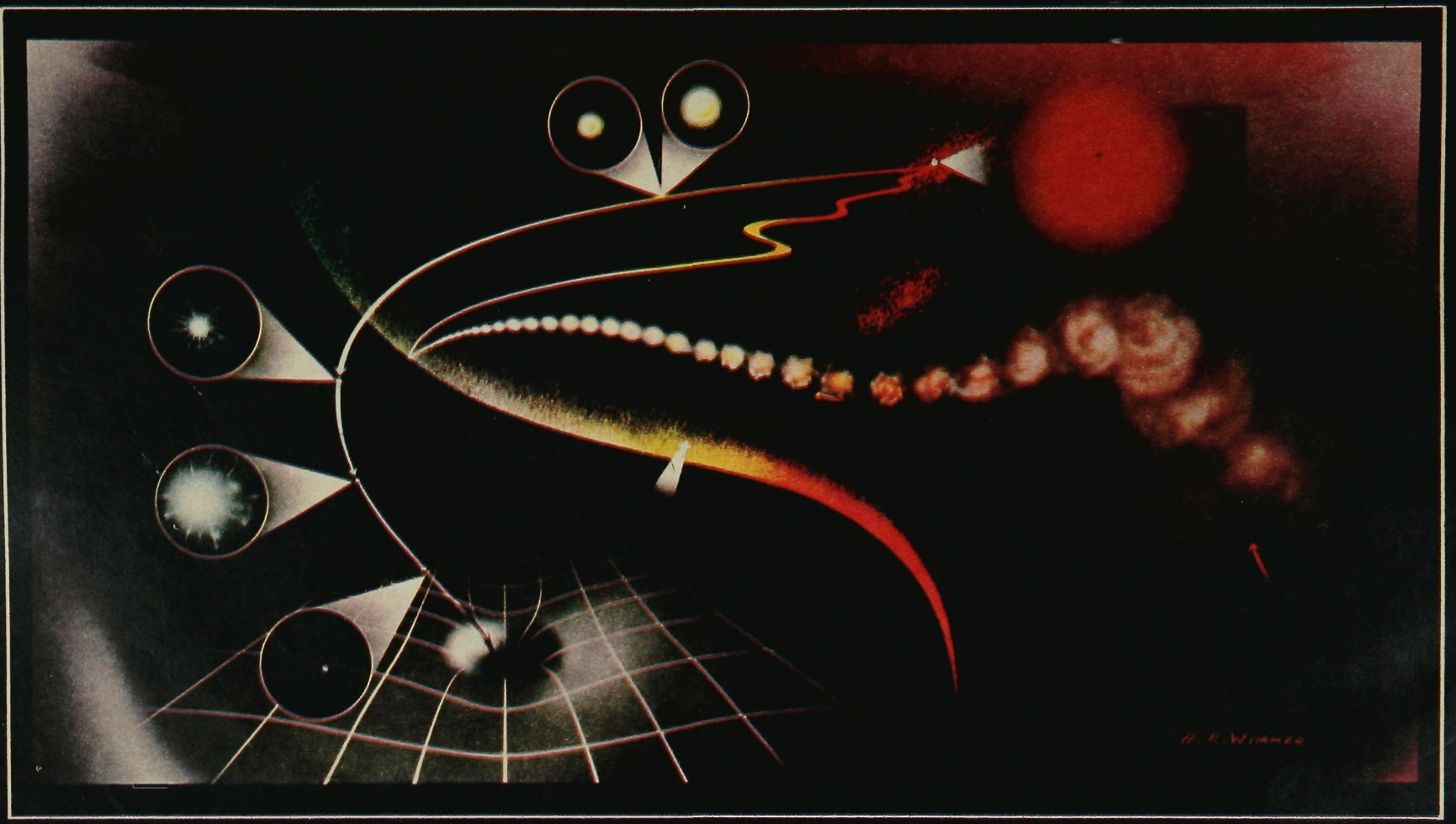
Chandra likes to cite an Indian parable, learned in his childhood, about dragonfly larvae at the bottom of a pond: "A constant source of mystery for these larvae was what happens to them when, on reaching the stage of chrysalis, they pass through the surface of the pond, never to return." Each larva, as it feels impelled to rise to the surface and depart, according to the parable, "promises to return and tell those that remain behind what really happens, and to confirm or deny a rumor attributed to a frog that when a larva emerges on the other side of their world it becomes a marvelous creature with a long slender body and iridescent wings. But on emerging from the surface of the pond as a fully formed dragonfly, it is unable to penetrate the surface no matter how much it tries and how long it hovers." As with someone who might fall into a black hole, communication is irrevocably cut off.

The parable ends with the endless and hopeless cry of the larvae:

... Will none of you in pity,
To those you left behind,
disclose the secret?

Perhaps, in the long run, we will be more fortunate and will not have to fall into a black hole to guess what is there." ■

From an article by
Walter Sullivan
New York Times Maga
July 14, 1974



The birth and death of a star, a painting based on a chart that measures its luminosity and temperature at each stage. The star is born as a cloud of dust collects (red arrow). Reaching maturity, it joins the mainstream of stars (curve at center). In old age, it becomes (counterclockwise from top right) a red giant, then a pulsating star and, finally, explodes into a nova or a supernova. With no energy left at its core, it collapses violently, leaving a faint, dense neutron star—or a superdense, invisible black hole, which plays tricks with time and space.

Painting by Helmut Wimmer for Smithsonian Magazine

ABOUT PHOTOGRAMS:

A transitory statement

Today the non-objective image is accepted as a form of serious art. "This turnaround has come partly because realism has done its job perhaps too well. Pictures have nearly replaced words as a means of communicating ideas; we are so saturated by dynamic visual images....that we have learned to select (or abstract) from concrete images the essential message. A picture that is already abstracted is no surprise."

A careful look at contemporary photography indicates that pre-conceptions about the photographic medium seems less significant now than they have in the past. There is a reluctance - no, a refusal - to recognize or accept limitations on photography as a communications medium.

In the photogram, the image-maker need not limit himself to the real world. Freed from the demands of reality, he creates his own world of visual fantasies. Through his skills in modualating light, he synthesizes, and records, a conceptual image - an often mysterious and aperspectival picture of space-time-continuum.

The producer of photograms becomes both creator and participant in optical experiences and events.

Moholy-Nagy wrote, in his last years, "The greatest promise for the future will lie in mastering the color photogram".

I look upon my thesis work as a transition - a transition from concern for subject as the

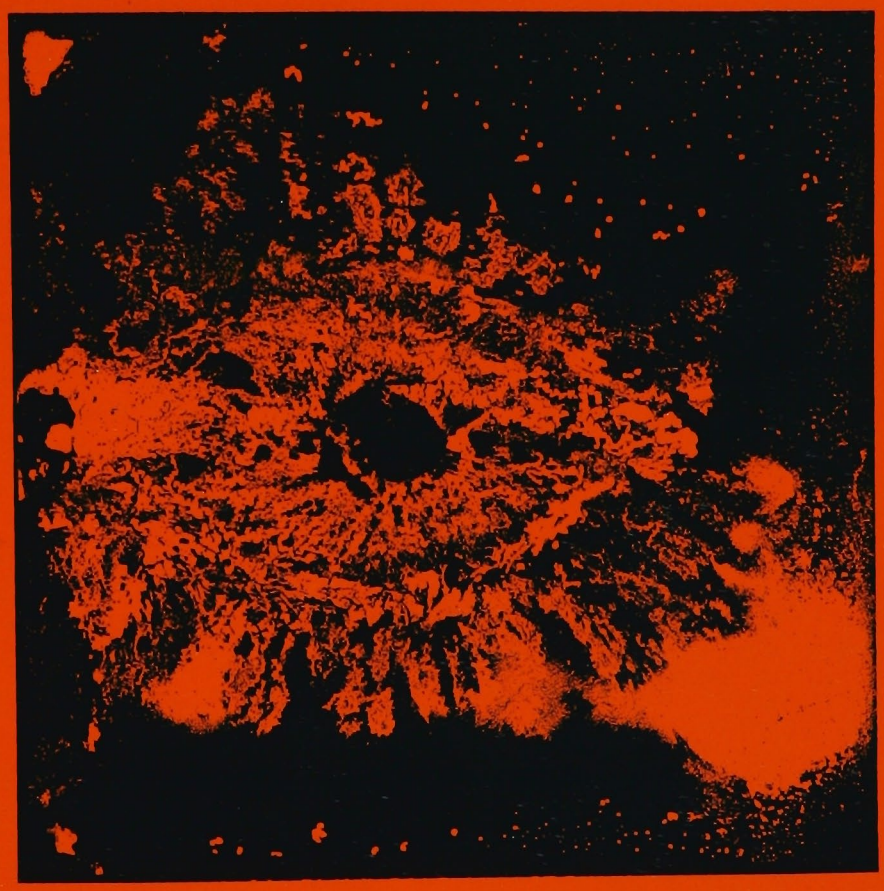
main interest in a photograph . . . . .

to concern for the image as an entity

and an end unto itself.

WESTON KEMP
JULY 1974

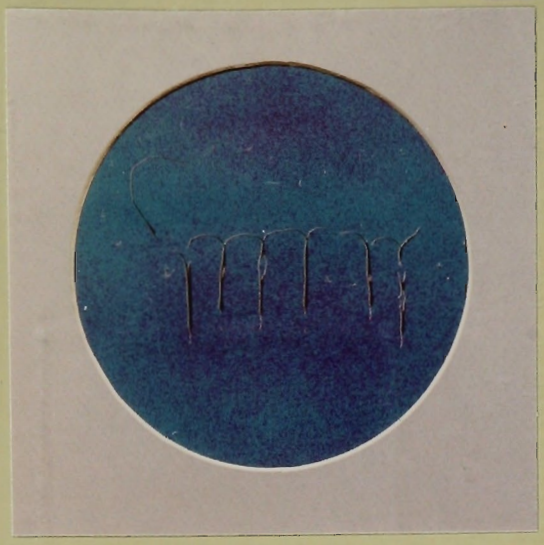
SPECTRAL FANTASIES



WESTON KEMP

MAY 28 — JUNE 1, 1974

M.F.A. GALLERY
GANNETT BUILDING
ROCHESTER INSTITUTE OF TECHNOLOGY



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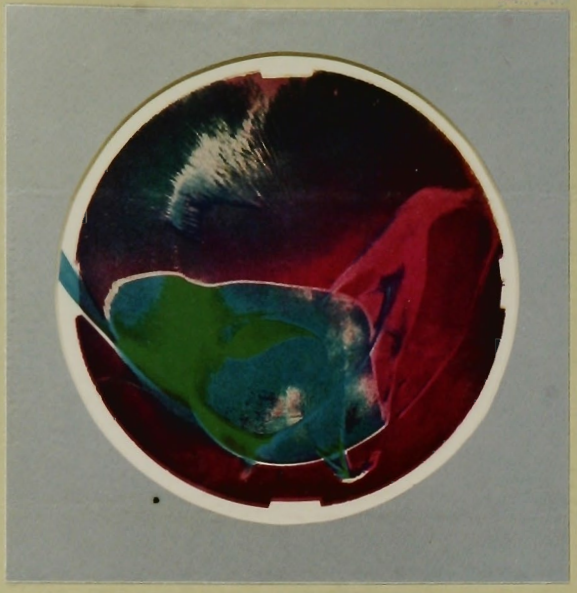

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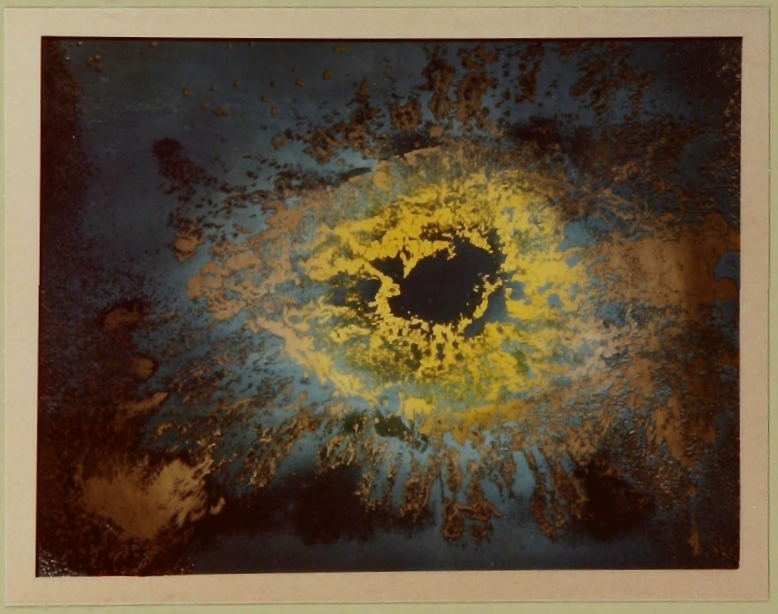

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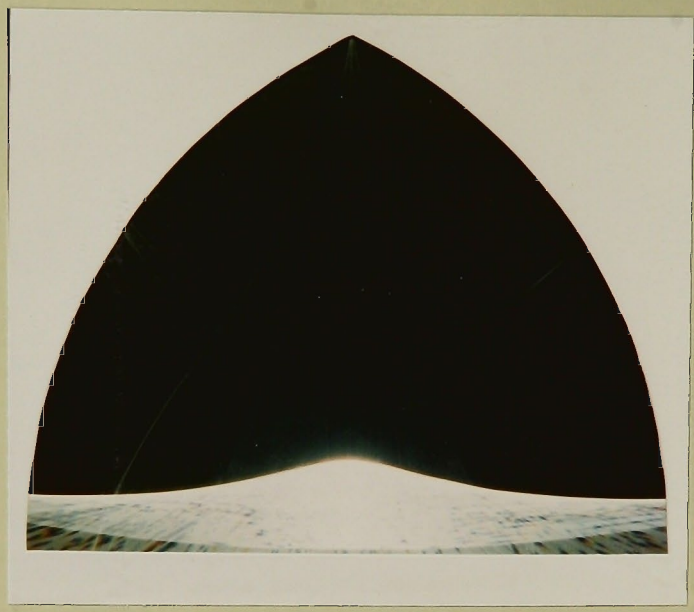

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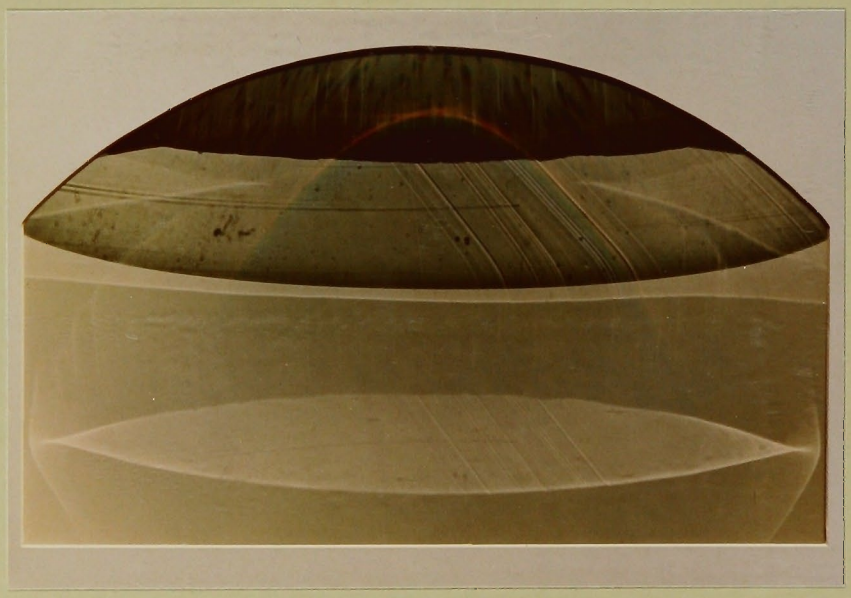

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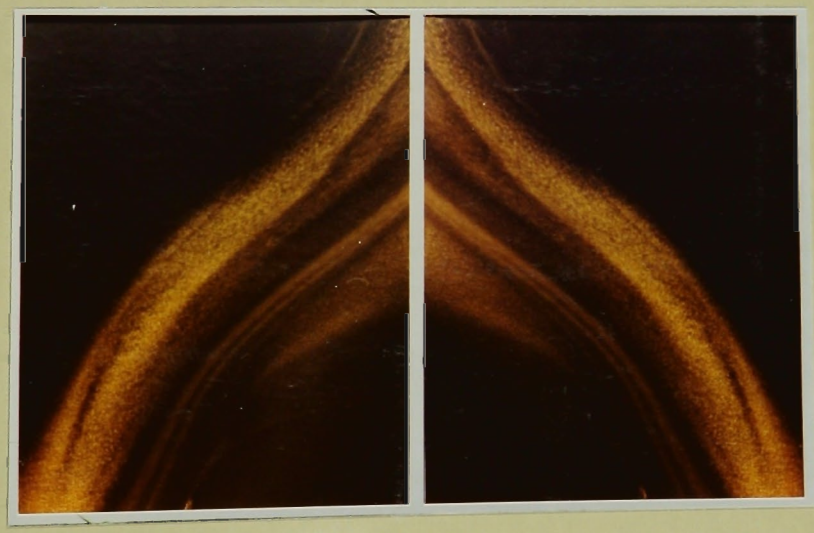
15×19

14×11



32×20

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